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AN - PREV199799383226

RN - 6217-54-5Q (DOCOSAHEXAENOIC ACID); 25167-62 (DOCOSAHEXAENOIC ACID)

TI - Supplementation with an algae source of docosahexaenoic acid increases (n-3) fatty acid status and alters selected risk factors for heart disease in vegetarian subjects

AB - The purpose of this double-blind study was to investigate the influence of dietary supplementation with an algae source of docosahexaenoic acid (DHA; 22:6(n-3)), devoid of any eicosapentaenoic acid (EPA; 20:5(n-3)), on serum/platelet DHA status, the estimated retroconversion of DHA to EPA, and risk factors for heart disease in vegetarian subjects. Healthy vegetarians (12 male, 12 female) consumed nine capsules daily of either DHA (1.62 g/d) or corn oil for 6 wk. Consumption of DHA capsules increased DHA levels in serum phospholipid by 246% (from 2.4 to 8.3 g/100 g fatty acids) and in platelet phospholipid by 225% (from 1.2 to 3.9 g/100 g fatty acids). EPA levels increased in serum phospholipid by 117% (from 0.57 to 1.3 g/100 g fatty acids) and in platelet phospholipid by 176% (0.21 to 0.58 g/100 g fatty acids) via metabolic retroconversion; the estimated extent of DHA retroconversion to EPA was 11.3 and 12.0%, based on the serum and platelet analyses, respectively. Arachidonic acid (AA; 20:4(n-6)) levels in serum and platelet phospholipids decreased moderately during the trial period (DHA group) as did both docosapentaenoic acids (22:5(n-6) and 22:5(n-3)). Although no significant changes were found in the total and LDL-cholesterol levels with DHA supplementation, the total cholesterol:HDL-cholesterol ratio showed a moderate decrease over time as did the LDL-cholesterol:HDLcholesterol ratio and serum triglyceride concentrations. DHA supplementation did not alter the various thrombogenic factors measured. In conclusion, DHA supplementation markedly enhanced the DHA status (of serum and platelets), provided for the formation of substantial EPA, and lowered the total and LDL-cholesterol:HDL-cholesterol ratios.

IW - ** Major Concepts **
Cardiovascular Medicine (Human Medicine, Medical Sciences) ; Nutrition
- ** Organisms **
(Hominidae): human
- ** Taxanotes **
Animals, Chordates, Humans, Mammals, Primates, Vertebrates
- ** Super Taxa **
Primates, Mammalia, Vertebrata, Chordata, Animalia
- ** Chemicals and Biochemicals **
DOCOSAHEXAENOIC ACID

AW - ** Miscellaneous Descriptors **
ALGAE SOURCE; CARDIOVASCULAR SYSTEM; CORONARY HEART DISEASE; DOCOSAHEXAENOIC ACID; FEMALE; HEART DISEASE; HIGH DENSITY LIPOPROTEIN-CHOLESTEROL; LOW DENSITY LIPOPROTEIN-CHOLESTEROL; MALE; N-3 FATTY ACID; NUTRITION; PHOSPHOLIPID; PLATELET CONCENTRATION; SERUM CONCENTRATION;

SUPPLEMENTATION; THROMBOGENIC RISK FACTORS; VEGETARIAN

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PCC - 13222, Nutrition - Lipids
14506, Cardiovascular system - Heart pathology
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